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SAP / FINNEGAN, HENDERSON LLP
901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER	
CHEN, QING	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/676,819	WEDEL ET AL.	
	Examiner	Art Unit	
	Qing Chen	2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 August 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 8-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office action is in response to the amendment filed on August 22, 2008.

2. **Claims 1-6 and 8-14** are pending.

3. **Claims 1, 3, 9-11, and 14** have been amended.

4. **Claim 7** has been canceled.

5. The objections to Claims 9-13 are withdrawn in view of Applicant's amendments to the claims.

Response to Amendment

Claim Objections

6. **Claims 9-13** are objected to because of the following informalities:

- **Claim 9** recites the limitation "at least one of the plurality of data structures." Applicant is advised to change this limitation to read "at least one data structure of the plurality of data structures" for the purpose of keeping the claim language consistent throughout the claims.
- **Claims 10-13** depend on Claim 9 and, therefore, suffer the same deficiency as Claim 9.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. **Claims 1, 3, 4, 9, and 11-14** are rejected under 35 U.S.C. 102(b) as being anticipated by **US 5,990,906 (hereinafter "Hudson")**.

As per **Claim 1**, Hudson discloses:

- displaying a user interface in a client program, the user interface having a plurality of controls, the plurality of controls including multiple types of controls, each control having a state and a control data structure, wherein the state of the control includes a data state and a view state *(see Figure 2; Column 7: 39-45, "As noted above, the undo/redo feature of the present invention is preferably comprised in the LabVIEW graphical programming system from National Instruments Corporation. The LabVIEW graphical programming system includes a large number of different function nodes, structure nodes, and other graphical programming constructs to which the undo/redo feature of the present invention applies."; Column 9: 52-61, "In step 220 the method initializes data structures for the new transaction that has started. These data structures include the backup list, the type list, and the transaction table."; Column 12: 33-37, "As shown, for a data change, the method stores the data in the transaction table in step 324. A data change generally involves the data that the user sees, e.g., the value of a number or a front panel control." and 64-67 to Column 13: 1-4, "As shown, an edit change can comprise either a creation of an object, deletion of an object, or modification of an object. In the preferred*

embodiment, the method uses a backup list for each transaction for backing up an object in response to an edit change.");

- for each control in the plurality of controls, storing the state of the control as a first state for the control in the control data structure *(see Column 10: 41-43, "If an object is required to be modified as determined in step 304, then in step 306 the method stores information regarding the object, i.e., backs up the object.")*;

- receiving user input comprising a change to the state of a control in the plurality of controls *(see Column 10: 48-51, "In step 308 the graphical programming system applies the change to the object. In other words, in step 308 the user input received in step 202 is applied to perform a transaction or change in the graphical program.")*;

- updating the state of the control based on the user input *(see Column 10: 48-51, "In step 308 the graphical programming system applies the change to the object. In other words, in step 308 the user input received in step 202 is applied to perform a transaction or change in the graphical program.")*;

- storing the updated state of the control as a second state for the control in the control data structure *(see Column 13: 7-11, "The backup list comprises a list of pairs of entries for each transaction, more specifically a list of pairs of ObjIDs. The entries in each pair are referred to as current and previous entries, also referred to as foreground and background entries.")*;

- receiving user input comprising a request to undo the change *(see Column 15: 45-48, "As shown, in step 402 the user selects the undo or redo option.")*;

- determining whether the change affects the data state of the control *(see Column 16: 1, "In step 410 the method undoes data changes.")*;

- determining whether the change affects the view state of the control *(see Column 15: 54, "In step 408, the method undoes edit changes.")*; and

- restoring the state of the control to reflect the first state for the control *(see Column 15: 54, "In step 408, the method undoes edit changes."; Column 16: 1, "In step 410 the method undoes data changes.")*.

As per **Claim 3**, the rejection of **Claim 1** is incorporated; and Hudson further discloses:

- restoring the state of the control only if the change affects the data state of the control *(see Column 16: 1, "In step 410 the method undoes data changes.")*.

As per **Claim 4**, the rejection of **Claim 1** is incorporated; and Hudson further discloses:

- receiving user input comprising a request to redo the change to the control *(see Column 15: 45-48, "As shown, in step 402 the user selects the undo or redo option.")*; and

- restoring the state of the control to reflect the second state for the control *(see Column 15: 54, "In step 408, the method undoes edit changes."; Column 16: 1, "In step 410 the method undoes data changes.")*.

As per **Claim 9**, Hudson discloses:

- generating a plurality of data structures that store application data and associations between the application data and a plurality of application controls, wherein each application control of the plurality of application controls has a state and a control data structure, wherein the state of each application control of the plurality of application controls includes a data state and a

view state, and wherein each application control of the plurality of application controls is rendered based on the application data *(see Figure 2; Column 7: 39-45, "As noted above, the undo/redo feature of the present invention is preferably comprised in the LabVIEW graphical programming system from National Instruments Corporation. The LabVIEW graphical programming system includes a large number of different function nodes, structure nodes, and other graphical programming constructs to which the undo/redo feature of the present invention applies."; Column 9: 52-61, "In step 220 the method initializes data structures for the new transaction that has started. These data structures include the backup list, the type list, and the transaction table."; Column 12: 33-37, "As shown, for a data change, the method stores the data in the transaction table in step 324. A data change generally involves the data that the user sees, e.g., the value of a number or a front panel control." and 64-67 to Column 13: 1-4, "As shown, an edit change can comprise either a creation of an object, deletion of an object, or modification of an object. In the preferred embodiment, the method uses a backup list for each transaction for backing up an object in response to an edit change.")*;

- detecting that at least one application control of the plurality of application controls has changed from a prior state to a new state *(see Column 10: 48-51, "In step 308 the graphical programming system applies the change to the object. In other words, in step 308 the user input received in step 202 is applied to perform a transaction or change in the graphical program.")*;

- determining whether the change affects the data state of the at least one application control *(see Column 16: 1, "In step 410 the method undoes data changes.")*;

- determining whether the change affects the view state of the at least one application control *(see Column 15: 54, "In step 408, the method undoes edit changes.")*;

- recording the prior state of the at least one application control *(see Column 10: 41-43, "If an object is required to be modified as determined in step 304, then in step 306 the method stores information regarding the object, i.e., backs up the object.")*;

- updating at least one of the plurality of data structures based on the new state *(see Column 13: 7-11, "The backup list comprises a list of pairs of entries for each transaction, more specifically a list of pairs of ObjIDs. The entries in each pair are referred to as current and previous entries, also referred to as foreground and background entries.")*;

- receiving user input requesting that an undo operation be performed *(see Column 15: 45-48, "As shown, in step 402 the user selects the undo or redo option.")*;

- performing the undo operation by restoring the at least one application control to the prior state *(see Column 15: 54, "In step 408, the method undoes edit changes."; Column 16: 1, "In step 410 the method undoes data changes.")*; and

- updating the at least one data structure of the plurality of data structures based on the prior state *(see Column 13: 7-11, "The backup list comprises a list of pairs of entries for each transaction, more specifically a list of pairs of ObjIDs. The entries in each pair are referred to as current and previous entries, also referred to as foreground and background entries.")*.

As per **Claim 11**, the rejection of **Claim 9** is incorporated; and Hudson further discloses:

- wherein the at least one data structure of the plurality of data structures is stored on a client device *(see Figure 1: 12)*.

As per **Claim 12**, the rejection of **Claim 9** is incorporated; and Hudson further discloses:

- wherein the plurality of application controls include multiple types of controls *(see Column 7: 39-45, "As noted above, the undo/redo feature of the present invention is preferably comprised in the LabVIEW graphical programming system from National Instruments Corporation. The LabVIEW graphical programming system includes a large number of different function nodes, structure nodes, and other graphical programming constructs to which the undo/redo feature of the present invention applies.").*

As per **Claim 13**, the rejection of **Claim 9** is incorporated; and Hudson further discloses:

- wherein the associations between the application data and the plurality of application controls are defined by metadata *(see Column 9: 52-61, "In step 220 the method initializes data structures for the new transaction that has started. These data structures include the backup list, the type list, and the transaction table.").*

Claim 14 is an apparatus claim corresponding to the computer program product claim above (Claim 1) and, therefore, is rejected for the same reason set forth in the rejection of Claim 1.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. **Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hudson** in view of **"HTML 4.01 Specification," December 1999 (hereinafter "HTML1999")**.

As per **Claim 2**, the rejection of **Claim 1** is incorporated; however, Hudson does not disclose:

- wherein the multiple types of controls include one or more of a text field control type, a radio button control type, a table control type, a tray control type, and a menu control type.

HTML1999 discloses:

- wherein the multiple types of controls include one or more of a text field control type, a radio button control type, a table control type, a tray control type, and a menu control type *(see Section 17.2.1)*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of HTML1999 into the teaching of Hudson to include wherein the multiple types of controls include one or more of a text field control type, a radio button control type, a table control type, a tray control type, and a menu control type. The modification would be obvious because one of ordinary skill in the art would be motivated to enhance usability.

11. **Claims 5 and 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hudson** in view of **US 6,167,455 (hereinafter "Friedman")**.

As per **Claim 5**, the rejection of **Claim 1** is incorporated; however, Hudson does not disclose:

- wherein the user input comprising the request to undo the change is received while focus is not on the control.

Friedman discloses:

- wherein the user input comprising the request to undo the change is received while focus is not on the control *(see Column 2: 36-44, "The individual command objects are linked, so that one command object can be accessed and invoked in one context, when the other command object is invoked in an active context. This allows for synchronization of the execution of the command objects, so that both command objects are either done or undone at the same time. In this manner, the user will perceive the action as unified, even though it affects data objects in two contexts.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Friedman into the teaching of Hudson to include wherein the user input comprising the request to undo the change is received while focus is not on the control. The modification would be obvious because one of ordinary skill in the art would be motivated to produce consistent results *(see Friedman – Column 2: 64-67)*.

As per **Claim 6**, the rejection of **Claim 1** is incorporated; however, Hudson does not disclose:

- wherein restoring the state of the control includes restoring the state of another control that shares data with the control.

Friedman discloses:

- wherein restoring the state of the control includes restoring the state of another control that shares data with the control *(see Column 2: 44-47, "The user can thus cause the do and undo method of one command object to be invoked, and the corresponding do or undo method of a linked command object will also be invoked.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Friedman into the teaching of Hudson to include wherein restoring the state of the control includes restoring the state of another control that shares data with the control. The modification would be obvious because one of ordinary skill in the art would be motivated to produce consistent results *(see Friedman – Column 2: 64-67).*

12. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hudson** in view of **US 5,524,205 (hereinafter "Lomet").**

As per **Claim 8**, the rejection of **Claim 1** is incorporated; however, Hudson does not disclose:

- wherein restoring the state of the control occurs prior to transmitting the state of the control to a server.

Lomet discloses:

- wherein restoring the state of the control occurs prior to transmitting the state of the control to a server *(see Column 1: 66-67 through Column 2: 1-3, "... a function shipping system,*

which is better known as a "partitioned" system, ships a collection of operations to the computer designated as the "server" for a partition of the data.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Lomet into the teaching of Hudson to include wherein restoring the state of the control occurs prior to transmitting the state of the control to a server. The modification would be obvious because one of ordinary skill in the art would be motivated to perform the operations and ships the results back to the requestor *(see Lomet – Column 2: 2-3).*

13. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hudson** in view of **US 6,543,006 (hereinafter "Zundel")**.

As per **Claim 10**, the rejection of **Claim 9** is incorporated; however, Hudson does not disclose:

- wherein the at least one of the plurality of data structures is at least one data tree.

Zundel discloses:

- wherein the at least one of the plurality of data structures is at least one data tree *(see Column 4: 40-46, "Program 30 utilizes several Directed Acyclic Graph (DAG) data structures to track design data and design intent. These structures will be briefly discussed to provide a foundation for terminology used throughout this description. These DAGs are presented purely for exemplary purposes--other data structures, such as non-directional graphs, trees, etc., can*

also be used."; Column 8: 60 and 61, "Note also that either a linear list or hierarchical tree can be used to track operations and related program states.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Zundel into the teaching of Hudson to include wherein the at least one of the plurality of data structures is at least one data tree. The modification would be obvious because one of ordinary skill in the art would be motivated to make information easier to manipulate and search.

Response to Arguments

14. Applicant's arguments with respect to Claims 1, 9, and 14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Qing Chen whose telephone number is 571-270-1071. The Examiner can normally be reached on Monday through Thursday from 7:30 AM to 4:00 PM. The Examiner can also be reached on alternate Fridays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Wei Zhen, can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Q. C./

Examiner, Art Unit 2191

/Wei Y Zhen/

Supervisory Patent Examiner, Art Unit 2191